Responsible use to responsible harm

Responsible use to responsible harm: illicit drug use and peer harm reduction in a darknet cryptomarket

Angus Bancroft*

Department of Sociology, University of Edinburgh, Edinburgh, United Kingdom

*__Corresponding author__ Angus Bancroft Email: Angus.Bancroft@ed.ac.uk

Short title: Responsible use to responsible harm

Abstract

Sale of illicit drugs through online 'cryptomarkets' is a notable innovation in the illicit drug market. Cryptomarkets present new ways of configuring risk and harm in relation to drug use. I examine the kinds of knowledge and discourses users employed to do this. Following Zinn (2008), I argue that the lay/expert divide that

creates a hierarchy of knowledge around drug use and harms is increasingly undermined by the creation of knowledge communities by drug users who make drug use work effectively for them. I draw on the discussion forum of a now defunct English language focused cryptomarket, anonymised as 'Merkat', collected between 2015-16. Typically, vendors in the major cryptomarkets are based in the USA, UK, China, the Netherlands and Australia (van Buskirk, et al. 2016). Buyers were mainly located in the USA, UK, Australia and Western Europe (Winstock and Barratt, 2017). I scraped the market forum threads and coded on emergent themes. I found that risk worked along four axes, cultural normalisation/pathologisation, chemical potency, legal/policy and market, each of which required a set of practices and orientations to manage successfully. Users indicated that they had adapted many harm reduction practices, while also promoting a 'responsible harm' orientation where they sought to own and take charge of harm. The support infrastructure drew on knowledge from drug users, vendors and interested professionals. I conclude that cryptomarkets can provide a community infrastructure that supports the exchange of drugs and configures them as risky but manageable objects.

Keywords: risk, darknet, illicit drugs, cryptomarkets, harm reduction

Introduction

In this article, I examine the kinds of knowledge and practices users employed to identify and minimise the risks associated with their use of illicit drugs purchased through online cryptomarkets. These are a novel set of online markets for the exchange of illicit drugs along with other goods and services. I draw on data from a now defunct cryptomarket to examine how users talked about risk and their strategies for managing the different types of risk associated with sourcing drugs on the cryptomarket. I examine strategies being developed to mange and understand risk in terms of how harm is reconfigured in a way that is relatable and graspable for them.

The cryptomarkets, drugs and risk

The internet is a growing medium for the purchase of illicit drugs and for peer-to-peer sharing of information about drug types, effective use and safety (Barratt, 2011). Ideas of harm are implicit in many research fields concerned with illicit

drugs and risk such as public health and criminology. Although often individualised as a personal trouble, harm is increasingly recognised as structurally distributed and experienced (Rhodes, 1997, 2002, 2009). To extend this debate, I want to examine harm as a construct towards which drug users act and that they create through the systems they use to buy and discuss drugs. So harm becomes an active object rather than just a potential negative outcome to be avoided. I examine strategies being developed to mange and understand risk to a novel set of online markets for the exchange of illicit drugs, the cryptomarkets in terms of how harm is reconfigured in a way that is relatable and graspable for them.

Risk is meaningful, communicative and identity forming (Brown, 2014). I approach it as constructive of the kind of citizen we are encouraged to be. The ideal of the self-managed citizen is promoted in platform capitalism (Pasquale, 2017; Pereira and Scott, 2016). All kinds of behaviour become quantified, informationalised, mined, performed and commodified through the data infrastructure (Lupton, 2016). However this does not reduce uncertainty. It creates new measures of social and political worth towards which people are enjoined and impelled to act (Beer, 2016; Lupton, 2015) and which create new uncertainties.

The data infrastructure is presented as creating knowledge (of one's health, friends, work prospects and so on) while in fact creating a radical incompleteness. Nobody can measure up to the ideal, or know exactly what that ideal is. That is a deliberate choice in the way the infrastructure has been created. It is both privatised (the data is harvested and jealously guarded by the private platforms that constitute most of the internet) and nationalised (national governments seek to make it accessible to themselves as in the case of the activities of the US National Security Agency). It creates new dangers (such as coordinated harassment and leaking of personal data). In response some users have sought to create and adapt software and hardware infrastructures that will allow them to manage and control social, personal, legal and cyber-risk, of which the darknet is one example

.

The darknet is a set of system relays and encryption protocols that disguises the origin, content and destination of internet traffic. The most prominent of these is the Tor (The Onion Router) network. It was developed so that citizens, particularly of repressive regimes, could communicate and browse the internet anonymously (Çalışkan et al, 2015). It can also host hidden 'onion services', a function for which

it has become better known, to the chagrin of some Tor supporters. Paired with the peer to peer payment system Bitcoin, onion services allow people to exchange goods and services without their transactions being cleared through any financial institution or exposed to any external surveillance. This function first came to prominence with the launch of the Silk Road site in 2011 (Aldridge and Décary-Hétu, 2014; Barratt et al, 2014b). Illicit drugs amounted to around 70% of listings on the site (Martin, 2014). Following the closure of Silk Road by law enforcement in 2013 numerous other markets have sprung up, been closed down and replaced again (Décary-Hétu and Giommoni, 2017). The overall cryptomarket structure is dynamic with many new markets coming online, which encourages vendors to set up accounts across multiple markets (Broséus et al., 2016). New markets typically offer special deals to established vendors such as importing their existing vendor rating and feedback, or a waiver of the normal vendor bond required on setting up a vendor account. Vendors can be connected across markets if they choose to use the same encryption key (Décary-Hétu and Quessy-Doré, 2017).

These innovations allow for a modicum of stability across different markets. There is also a growing number of single vendor shops, some little more than Tor onion site pages with contact information. Research has highlighted the potential of cryptomarkets as harm reducing mostly in terms of supply, drug quality, provision of harm reduction information and reducing conflict and predation (Aldridge et al 2017; Aldridge and Décary-Hétu, 2016). Availability of drugs on cryptomarkets has varied effects on the markets and users, depending on their location, social networks and drug use history. Some users temporarily indulge in a sweetie-shop approach, testing a wider range of drugs than they had available to them on the face-to-face markets before settling down to a range of preferred drugs. Well connected users sometimes move into small scale dealing, using the cryptomarkets to buy in bulk. As Barratt et al put it:

> as the social reference group people identify with changes, information and supply flows also change, and new drugs and drug practices become both more physically, socially and psychologically available. (2016b: p. 6)

The development of cryptomarkets alters risk patterns and practices alter as well as the meaning attached to drug use.

Multiple harms cohere around drug use, not all of which are directly related to the drug itself. Stigma, exclusion, legal risks and multiple risk vectors can be traced to the cultural social, political and economic contexts of drug use. For example, the context of heroin use might involve potential harms such as overdoses and vein damage, the risks needed to obtain the drug and use it, and the tradeoffs with others, the need to manage relationships with partners, children, social services, and avoid police and other surveillance (Rhodes, 2002). There is not then a simple calculus of harm in the drug market because there is no agreement between legislators, law enforcement, researchers, health workers, dealers and users about the origin and nature of those harms.

Zinn's (2008, 2016) concept of 'in-betweenness'; between expert rationality and lay irrationality, provides a way of thinking about the context cryptomarkets operate in. The established lay/expert distinction does not make very much sense when expert knowledge is quite limited, particularly of cryptomarkets, and users

themselves access and develop expertise and make decisions about the distribution of harm reduction material (Aldridge et al, 2017). My aim in this paper is to explore the types of knowledge evident in cryptomarkets and the ways they are used to manage risk

Methodology

In this article I draw on data from a qualitative study of the motivations and experiences of cryptomarket users. In this study, I examined the dynamics of cryptomarkets and the kinds of information available to users to make decisions about drug purchase and use. I chose one cryptomarket to study which I have anonymised as 'Merkat'. It was until 2016 one of the larger markets when it was ,'temporarily' suspended by its administrators. Like many cryptomarkets, Merkat had a large and active forum where users discussed drug qualities, drug effects, and the reliability or otherwise of various vendors. The variety of drugs discussed and the different situations and perspectives forum users brought to the discussions made Merkat's forum an ideal platform to use. I asked permission from the forum organiser to conduct research. No reply was received. I decided to go

ahead with the research because the forum was open access and did not have any rules explicitly prohibiting researchers from using forum posts.

Although direct demographic data is not available on Merkat users, it is possible to infer from the geographical locations vendors commonly ship to in studies of the major cryptomarkets that they are based in the USA, UK, China, the Netherlands and Australia (van Buskirk, et al. 2016). From the kinds of idioms used by participants that they are mainly native English speaking, and that vendors are primarily based in the US, UK and Australia with some in other Western European countries (Winstock and Barratt, 2017). This is also typical of cryptomarket users who participated in the Global Drug Survey (Barratt et al 2017). Compared to the participants in Winstock's (2017) survey of drug users, the users in the cryptomarkets were younger (24 years compared to 40 years), largely male (87% male compared to 67%) and more active in the clubbing scene.

As I wanted to focus on the breadth and depth of users' orientations to risk and harm, I automatically copied data from the forums running back to the inception of the market in 2014. To analyse the data I imported it into Nvivo and used hand and automatic coding. I chose Nvivo because it allowed for a combination

of manual and automatic coding through which emerging hypotheses can be tested. I developed codes to reflect the emerging interest in harm reduction. Initially I coded around common harm reduction terms such as dosing and syringe use. As I reviewed and re-coded, I developed more theoretical codes that reflected the micro- and macro-contexts shaping harm reduction practice. I then examined what sources of advice users trusted and what kinds of information they shared related to safer drug using practices.

As users were discussing illegal activity they took steps to protect their identities. Users employed pseudonyms and anonymity was generally treated as the price of entry for the forum and users reminded each other not to give out real world information that could be traced back to them. Generally users did not post such information but where they have I have I altered information in the quotations to ensure that there is no real world information on criminal activity. The study was approved under the School of Social and Political Science (University of Edinburgh) ethics procedure.

In this article I use anonymous data posted on a cryptomarket. There are inherent limits to looking at forum posts. 99% of posts are by 1% of users so this

small group of users dominate the posts and it is difficult to access other possibly dissenting voices. The majority of cryptomarket users are interested in buying drugs not in making posts so the data mainly comes from small, possibly atypical, groups of site users.

Findings

Structuring of risk

There are four structuring axes which involve culture, chemistry, legal/policy context and market structure. The Market forum gave people a way of articulating and addressing risks on each axis. Culture I framed as involving at one end normalisation and the other pathologisation of certain drug types and forms of use (Barratt et al, 2014a). Chemistry I defined as those effects attributed to the pharmacological characteristics of the drug and its interaction with the user, which can range from potentially dangerous but possibly rewarding potency to drugs that are attributed with manageable and predictable qualities (Bancroft and Scott Reid, 2016). Users paid attention to the legal and policy context and its implications for risks from law enforcement activity (Aldridge and Askew, 2017). The

market infrastructure was also carefully analysed by them, comparing with other markets to asses its reliability and trustworthiness of market actors and architecture (Beckert and Dewey, 2017). Each axis is embedded in different ways in the cryptomarkets, the wider digital infrastructures and associated systems, and national and international policy structures and cultures.

Cultural normalisation of use and supply has been identified as part of recreational drug cultures in the UK and more widely (Coomber et al, 2015; Measham and Shiner, 2009). It is the case on the cryptomarkets that many users operate in normalised drug cultures and see drug use as functional fun (Askew, 2016). In these cases risk is identified with uncontrolled use. However many users are more isolated, and their drug use does not correspond to the picture of drug use legitimated by a time and space bounded, recreational purpose. Many heroin users on the forums describe isolated circumstances and daily use which is not part of a shared recreational culture that can provide a normalising narrative for their drug use. In those cases the forums were the main focus of shared reflection and discussion of drug use for them. They discussed pathologisation risks such as stigma and the requirement for secrecy and the need to combine drug use with

work and family life with non-drug users. As this user described peer harm reduction was an aim but was hampered by the isolation and stigma many users experience:

> And to [user] hanoi: I feel you man. It sucks having to keep quiet about it, makes it really hard for the average person to get quality harm-reduction information. But when you don't keep quiet about it you get estranged from so many people you knew and loved and the binge continues. We are not terrible junkies huddled between trash bins shaking and looking dirty and pathetic without a thought in our head besides who we need to rob to get our next fix. No, I want that perception to change, and the best way to try to get that to happen is to advocate for more responsible drug use from my fellow drug lovers. Opiates/heroin is, in my opinion, one of the greatest drugs in the world, a true gift from 'god'. It should be respected and used responsibly, not abused and taken for granted, or it will fuck up your world. Forum user 'Allysbaba'.

This image of the responsible user turned up constantly in users' conversations. Users are implored by each other to act smartly and treat the drug with respect in relation to chemistry related risks. These are identified as stemming from the drug's potency, addictive qualities, pharmacokinetic action and interactions with other drugs and medications. Users can involve themselves in extreme drug use binges as long as they are temporary, and they are aware of what to expect and how to manage it without having to resort to a visit to hospital or involve other kinds of personal or legal trouble. Legal risks arose from law enforcement action. This was factored into the risk infrastructure as a risk that could be manageable with the right intelligence about law enforcement agencies. For example, that they prioritised particular drugs or user types as in the following posting.

> You must have a super supply of will power if you've been an O [opium] chipper [user] for 7 years! O is extremely addictive just like the other opiates. I'm not trying to talk you into continuing your journey, but I feel you because from the sound of your post, I'm on the same journey. Making your own O is so much better and safer than having to risk coins every time you make a darknet purchase, not to mention

> you're putting your life in the hands of the vendor in a way. Look what happened to Phillip Seymour Hoffman. Plus less risk with LE [law enforcement]. And I would think O would be less taxing on your liver, kidneys and the rest of your body, since it's all plant based and no added chemical fillers... at least that's my experience with O. Forum user 'spangledust'

Spangledust writes about making your own opioids as a way of reducing risk of law enforcement attention.

Users identified market risks from the use of Bitcoin, the peer to peer payment system used in cryptomarkets, and the market escrow process used to guarantee sales. Bitcoin is a highly volatile currency. One of the ways of ensuring trusted transactions in the market was for the administrator to keep Bitcoin in escrow until the drugs were delivered, only releasing them when the buyer confirmed, or after a set period of time which vendors did not like. There was in the posting talk about the good etiquette involved in releasing payment when goods arrived and not delaying payment until the last possible moment.Currency volatility

meant that the bitcoin could have a very different value by this point. Some vendors had a 'finalise early' option to reduce the risk of losses due to currency fluctuations or to the market closing as the result of an 'exit scam'; the market administrator leaving with the vendors' and users' bitcoin. The 'finalise early' option involved the release of the customer's Bitcoin as soon as the deal is agreed. This minimised the risks of the cryptomarket failing or going offline before the transaction was complete. However this option transfers market risk from the vendor to the customer whose only recourse if the drugs fail to arrive is to leave a bad review or criticise the vendor on the forum. A high level of trust is required for finalise early to work. Market risks were also recognised by other users as stemming from phishing (falsely obtaining private information) or other predatory criminal activity that targeted cryptomarket users.

In their posts, users dissect and discuss risks in terms of each of these four dimensions . Users updated each other continually on what risks applied where and how to manage or mitigate them. The different risks were produced in different structural contexts. Normalisation developed through local drug use cultures and the varied acceptance of different drug types and use contexts and involved both

drug users and non-users. Chemical risks emerged in the process of drug production and the user's personal drug history so these risks were recognised as being embedded in biography as well as pharmacology. Legal and policy risks were shaped by the structure of drug prohibition, surveillance systems the user was exposed to and the priorities of law enforcement agencies. Market risks worked through the process of drug buying as an exchange and as an economic system which was located in the structure of the cryptomarket payment, escrow and review systems. Each dimension worked at a different interface. Users talked about these harms as arising at these different interfaces and discussed harm reduction practice as taking responsibility for risks and harms at each interface.

Peer support

An example of peer support was the way site users shared on-line detailed experiences about heroin injecting techniques, how to avoid infection and accesses, and how to diagnose and cope with some of the immediate physical effects of injecting such as bruising. There were many sources of peer support, from those of experienced users to vendors. Some vendors provided harm reduction information with the drugs they sold but this was relatively basic content. The main

sources of information for users were in the market forums and from other users. Cryptomarket forums use structural peer rating features that allowed users to be promoted because of their positive interactions with others and provision of harm reduction support. Silk Road had its 'Karma' rating, and Merkat similarly has user ratings for dependability, mimicking feudal chivalry (Chevalier, Scutifer and so on). Being active in the forums and posting harm reduction advice is one of the criteria for being nominated for these recognised roles.

Many users saw it as important that others should be aware of the particular characteristics of the different products on offer. Some tested samples and posted the results on the forum:

> I'm as transparent as possible about the tests and always disclose if the sample has been bought anonymously or given by the vendor. Theoretically double blind tests would be best but that isn't feasible at this point. Please decide for yourself if you want to use the information or not. I refrain from publicly giving comments on cocaine vendors, their shipping methods and their products. I will only post the lab test results. There is no lab documentation available for the cocaine that has

been tested, the lab results are only provided verbally. The only way to be sure what your powder consists of is to get it tested yourself. Forum user 'Bugout'

As this user and other users acknowledged, some of the tests were based on free samples provided by vendors in the hope of garnering positive feedback. Many of those users who posted tests stated explicitly that it as part of their commitment to making the cryptomarkets work as a community that was capable of identifying and managing drug related risks. As one said 'we all have an interest in drugs, wether selling, buying, researching chemically' (tester HiKite).

Much of the discussion of drug safety in the Merkat forum was not explicitly badged as such. Users tended not to head for discussion threads on harm reduction or drug safety to discuss problems. They raised them in other threads on the forum, for example as part of discussions about drug quality, about how to use a particular product effectively, and the quality of particular vendors.

Peer support discussions covered various practical problems. Complaints extended to the general postal and service infrastructure that affected the speed of

deliveries, scamming by vendors, and having shipments intercepted by customs. Scamming by vendors was not a typical interaction but it was an anticipated risk. Problems were attributed on a combination of naïve 'noob' (new and inexperienced) users and weak or duplicitous management of the site. Other cryptomarket administrators could and did steal from customers and vendors (Duxbury and Haynie, 2017; Soska and Christin, 2015). During the study several similar sites fell prey to theft by administrators, or were suspected as having been set up for that purpose in the first place. There are claims that one site had many staff involved in filleting Bitcoin from buyers and sellers who they could then plausibly claim were scammers themselves.

The effect of the various postings was to create counter-narratives in opposition to prevailing characterisations of drug users (Maddox et al. 2016). Forum users challenged the distinction between good and bad drugs. One heroin user shared his experience of his girlfriend who was a regular cannabis user looking down on him for his intravenous drug use. Users recognised the structural context of stigma that made it difficult to obtain harm reduction information and challenge the stigma that applied to injecting drug users.

> Hello all my underground friends and law enforcement agents who got nothing better to do than watch us citizens safely navigate the e-blackmarket and exchange information and anecdotes about which vendors are legit, our experiences with a variety of chemicals, and safety/harm reduction. Forum user 'ProfWhite'

Users also discussed the ways in which the design and working of the darknet itself mitigated risk and stigma. Many users discussed how they felt much safer and less stigmatised purchasing and interacting with vendors through the market. They reported much more respectful and businesslike interactions with vendors than that which was felt to characterise offline markets. They felt most positively towards forum threads when they operated as a community.

> It's so nice that everyone here can talk openly, not be judged, help each other, provide tips and harm reduction tricks -- even provide each other with some Bitcoin when they're short -- it really is a beautiful thing. :) I trust the people in this thread and they know they can trust me, so it's just a great feeling to be able to rely on others here. Forum user 'TrumPet'

For this group of users, harm reduction was a community focused activity that involved a range of risks from the potential dangers associated with using the drug itself to the legal and social threats of personal exposure, shaming and stigma.

Risk signalling and responsible harm

A drug's potential danger could be taken as a sign of potency and effectiveness. Users incorporated the ability to manage what were perceived as more potent drugs into their drug use as a badge of experience. Users emphasises 'educated choices' in their normalised, risk-savvy approach to drug use. Such choices involved acting independently of both government sanctioned claims about blanket drug risk, and also of vendors' boasting about their product. The 'educated user' has the ability to consume responsibly, with self-reflection and awareness which would manage the risk as in the following post:

> Buy some (House Lannister and Platinum Standard for me). Test it.
>
> Take it only if you are educated enough, conscious enough, and self aware enough to take it responsibly. Make sure you know how the

meds that you take on the regular will be effected. Forum user 'ToddUnctous'

In site users posts there was a move away from the idea of risk as an assessment of potential harm to risk as a manageable, normal challenge that comes about in the course of obtaining and using drugs. The educated user would have the 'right stuff', the right personal characteristics to manage risk before, during and after taking the drug and incorporate expected harms into their drug use biography. In these posting the locus of risk was shifted from the drug and drug consumption process to the market structures and the operation of the market as a social process. Users who made points similar to those made by ToddUnctous were showing how aware they were of the market as a social infrastructure and risk as produced through this infrastructure. They acknowledged a range of potential harms related to the drug trade and drug consumption. For them responsible harm meant an approach that recognised that harm could only be minimised so far and that allowed for harm to exist as a likelihood in every user's drug use biography.

Users drew on a variety of sources for harm reduction advice beyond the Merkat forum. These include open internet sites such as Reddit and Erowid, harm reduction services and directly from the scientific literature. In their posting many users showed that they were familiar with current academic research. Users posts drew on expert knowledge but the did not cite the authority of experts in their assessment of the trustworthiness of advice given or received. This may reflect the success of public health harm reduction initiatives as a lot good practice was taken for granted such as using clean needles and properly preparing injecting works accepted as normal.

Users' claims to responsible harm involved putting the harms of illicit drugs in the context of other harms they were exposed to and taking responsibility for harms caused by their drug use. One way of doing this was to draw comparisons between harms from illicit drugs with those of prescribed or over the counter medicines. Another was to emphasise that the harm caused was limited to the drug user and did not affect others, as one user indicted in a post:

> This is probably the 3rd or 4th time I've done cocaine. I think nitrous oxide and ibuprofen have probably done more damage to my brain

and body than any cocaine/cut I've snorted in the past year. Forum user 'flame&citron'

Users recognised the association between chemical strength, risk and desire, for example a more unpredictable drug could also be more effective and desirable.. Such association is also recognised and evident in the advertising of pharmaceutical and alcohol companies (Gunter et al, 2010). For users drugs that were characterised as 'dangerous' were also often powerful. The talked about potency as a sign of both risk and of quality. There counter-public health discourse involved a narrative that was somewhat different from the public health harm reduction narrative.. For the educated and informed user, harm reduction practice extended beyond avoiding harm to more effective and safe use of multiple drugs. An advantage of the darknet was that users could obtain a great variety of drugs, in varying strengths and forms. Some presented this as a form of harm reduction. For example, using smokeable heroin to preserve a low tolerance, or using kratom to mitigate the effects of opiate withdrawal.

Users posts often linked personal good health and work success with being a a responsible user as in the following post by hot4teacher:

> So I got all the equipment (bulk syringes, needles, micron filters, alcohol swabs, tourniquet, sterile storage vials, sterile water for injection, BA, hand sanitizer for disinfection), put a using schedule into effect (no more then 3 days in a row and never during a workweek) and then got some nice #4. That was about 2 months ago and since then I have used pretty much every weekend. So far I have not had even the slightest inkling of physical w/d symptoms. … My job hasn't suffered the slightest (due to get a permanent contract along with a raise), I exercise regularly, eat healthy and continue to loose weight. And I actually learned a few things about medicine and pharmacology in order to be able to enjoy myself as much as I do using heroin while exercising a very high degree of harm reduction. But thats of course just the story of one person. Forum user 'hot4teacher'

There was in user posts a difference between the techniques of harm reduction and the narrative of better, safer use. For example, users referred to the complexities of interactions between drugs and the body and how these could be used to maintain heroin use and manage it using a range of supplementary drugs. For

many users the cryptomarkets are one source of such drugs. The could also obtain such drugs through the street market or acquaintances willing to sell, swap or give their prescriptions as loosenutz wrote:

> Methadone. Used to help wean addicts off heroin, but a very powerful opiate itself, some refer to it as pure evil, because of the terrible, painful, months long withdrawal symptoms you can experience if you abuse and become addicted to it. 'dones [methadones] are much better for recreational use than other opiates that are used to wean addicts off heroin in my opinion, such as suboxone. I would take about 10-15mg and I would get a mild euphoric buzz and I always noticed it seemed to come in waves. It can knock your ass out tho if you take too much, I remember being scared I was dying one time when I used it, hah. Forum user 'loosenutz'

Users discussed how drugs that were prescribed to control addiction and prevent pleasure such as methadone and suboxone could be re-used to attain pleasure and manage harm, for example by combining them with heroin and other opiates

as part of a drug use repertoire. Suboxone is prescribed as an addiction treatment. Users noted how useful the drug was for work. It operated in a slow way, tended to stay in the body, but did not have the debilitating qualities sometimes ascribed to methadone. GrimeReaper's post showed an understanding of what drug effects were and how to successfully combine them for example that suboxone is a partial antagonist as it contains naloxone

> I use very small amounts of sub in my hits. I am a little ashamed to admit, because it is sooo bad for you, and the mark of a worthless junkie, but I crush up the pill and IV it. But this is how little I use, I can make 1 of those 8mg pills last a week if I keep myself relatively under control.
>
> Forum user 'GrimeReaper'

In their posts users of opium derived drugs discussed how these drugs could substitute for each other in some ways and not in others, and how this was tied to the relative risks they presented. For example, heroin was fast acting and powerful but also presented a risk of addiction. That could be mitigated by using other drugs that worked more slowly, or which combined opioid agonists and antagonists. This attribute could be a positive. Users indicated that they could

manage drug dependence by moving from injecting to smoking, or from heroin to opium, substituting other drugs as needed. Their posts indicated a complex understanding of the ways in which drug use history, personal biography, the user's body and the drug molecule and delivery system interacted to produce particular effects, some of which they felt were were desirable , others had to be mitigated.

Discussion

Cryptomarkets have become meeting points where different kinds of knowledge can be combined and validated (van Hout and Hearne, 2016). They develop a risk infrastructure that provides technical tools, shared knowledge, and shareable judgements to manage risk. Cryptomarkets when they work as advertised are protective against law enforcement surveillance, predatory dealers and third party theft and enabling of drug use that is purposeful and pleasurable, or self-medicating, or for coping with life stresses. There were multiple framings of harm reduction, as avoiding punitive measures and moralising discourse (Keane, 2003), and incorporating and promoting the voice of users (Friedman et al 2007; Pauly,

2008). As Munsgaard et al., (2017) state, cryptomarket forums are a place where users can define the 'normative context' for drug exchange and use.

In their posts, users focussed more on harm management in this context, advocating complex drug use repertoires grounded in different sources of knowledge about drug effects. Some users claimed to use 'expert' knowledge derived from the scientific literature whereas others used personal experience or the reported experience of others. They discussed the ways that drugs typically prescribed for medical management purposes such as naloxone or methadone could be re-tasked for more involved harm management processes and for pleasure. This is typical of the way drug users routinely incorporate harm reduction into their drug using practice (Friedman et al, 2007). Users are a source of lay expertise for others (Jauffret-Roustide, 2009), they develop and share protective strategies {Harris and Rhodes, 2013}, and provide care and support (Drumm et al, 2005). Users are producers of knowledge about harm reduction that can augment, run ahead of, and challenge that of experts.

Many of the findings mirror others about harm management serving broader purposes of community building (Gowan et al 2012). User priorities are not necessarily those of mainstream public health which was sometimes seen as prioritising more abstract risks over immediate threats to the user (Harris and Rhodes 2012). Their discussion moves the focus of harm reduction from responsibilisation and discipline (Moore, 2009) to building on community and self-care (Gowan, 2012). Users are able to adapt medications used for harm reduction to their own needs. Faulkner-Gurnstein (2017) outlines how naloxone was initially seen by its manufacturers and public health experts as a technical quick fix to be administered by medical personnel. Users in this way it induced rapid withdrawal in users which was perceived by them as a form of punishment. When they were able to access and administer it themselves users had adapted it and used it as a self-help tool. Such user driven changes in the cultural context are typical of how it and other medications such as naloxone and subutex are discussed on the cryptomarkets.

In on-line discussions some risk factors change or are missing. Risks from purchasing the drug are shifted. There is still the risk that having paid for the drug it

is not delivered, which appears to be like being cheated. However the difference is there is some comeback. The buyer can dispute the order with the market administrator. That may or may not lead to satisfaction. It does change the emotional texture of the experience. The buyer is not at risk of a humiliating like it or leave it situation, so the power differential has altered somewhat.

This forum create a set of shared systems, tools and knowledge practices that give meaning to and are used to manage risk behaviour: a risk infrastructure. In it users challenge prevailing 'expert' risk narratives thus produce a counter-public health. Counter-public health has a long history, under various labels, of examining the formation of health and risk management strategies and of political activism by counter-publics, meaning those marginalised communities exposed to risk (Epstein, 1996; Robins, 2004). It describes the logic of collective action around risk behaviours that emerges from peer-to-peer communication. It focuses attention on the formation of risk priorities and practices that address health risks but have priorities that differ from and sometimes challenge those of formal public health. For example, there are individuals who prioritise pleasure over stopping risky activities (Hunt et al, 2007), that challenge predominant individualising narratives of

the meaning of risky behaviour (Bourgois and Schonberg, 2007). This challenging can produce new knowledge that may add to or overturn existing scientific risk paradigms and develop alternative peer-to-peer harm minimisation techniques (Decorte, 2001; Van Hout and Bingham, 2014). These communities form and are formed from political engagement to varying degrees. The original Silk Road was a site of political and philosophical discussion which is less evident in the markers that have replaced it as the users of the new cryptomarkets become more driven by concerns about security and usability (Munksgaard and Demant, 2016).

Seen in this way, cryptomarkets become the location for shared knowledge production formed around potential drug risks. They link to the wider 'demimonde' of alternative communities (Maddox et al, 2016) whereby participants enact alternative value structures and create protocols and knowledge sets in relation to drug exchange and use (Munksgaard and Demant, 2016). Cryptomarkets are particularly interesting as they are both a mode of obtaining drugs and are at least in principle designed to promote professional and accountable transactions and interactions between buyers and users (Barrat et al, 2016). The design and use of cryptomarkets can be seen as a response to the generation and distribution of

risks through drug prohibition and the discursive stigmatisation of them. They allow drug users to take risks and introduce deliberation and comparison into the drug buying process. There is co-production of harm reduction information and practice in the cryptomarkets between vendors, users and harm reduction experts who contribute to some forums. Some cryptomarkets also allow for some co-production of harm reduction products. For example, the Alphabay market encouraged vendors to provide the opioid agonist naloxone by waiving the vendor bond for those who did (Gilbert and Dasgupta, 2017).

The users of cryptomarkets can be seen as setting up an alternative, counter power structure to frame and manage risk which gives weight to the structural, political and legal factors which create risks for them (Munksgaard and Demant, 2016). This draws on and integrates some important insights from public health and harm reduction but also challenges some of the values implicit in them, especially the idea of harm reduction and risk minimisation. Responsible harm is a useful way of thinking about these processes by providing an avenue for the articulation and analysis of user evaluation, minimisation and accounting for harm. The cryptomarket enables some users to make informed choices about the risks

they want to take. Responsible harm meant constructing a risk agenda that incorporates some controlled risk but allows for a degree of unpredictability in drug taking. So although users are motivated by harm reduction, they also question some of its implications. Constructive risk taking to create a context which is supportive/controlled. In postings on the site users invert some of the priorities of risk management by mainstream discourse about drugs and harm reduction doctrine.

Conclusion

Competing ideas of harm exist under the same term. Harm reduction necessarily has to accommodate with competing political agendas. It emerged from and is sustained by activists, users and communities and explicitly concerns values as part of health (Boucher et al 2017). Cryptomarkets do not remove risk but do they do reconfigure harm. Structural associations may still exist for example, users may still have to engage in sex work to obtain money and expose themselves to attendant vulnerabilities. A user who earns cash through sex work and exchanges it for heroin is not in a position to leave that complex set of negotiations and

obligations and simply 'buy it on the darknet'. So there are strict limits to the cryptomarkets' harm reduction potential to transform the power relationships that exist in the offline drug market. Indeed the offline market may serve existing users adequately in many situations. We should also move beyond background assumptions that the 'street' is automatically more risky and has no inherent advantages (Abel and Fitzgerald, 2012). The potential of the cryptomarkets is to delink some of these overlapping structural elements. A key change is the separation of drug distribution from other environments, for example, from sexual exchange, nightclubs, and shooting galleries. New inequalities emerge. Users need resources to access cryptomarkets such as stable address for drug delivery, internet access and use skills or access to people who have them. One of the changes the cryptomarkets wrought is in relative power between different groups of users and vendors. Power has not gone away. Administrators have a great deal and there is suspicion of extensive collusion between them and vendors. Having said that, the relative dis-embedding from existing contexts that cryptomarkets have engineered does allow for users to combine a greater range of knowledge

sources when they examine risk and harm in relation to specific products on offer. They are also able to articulate narratives of drug use that resist stigmatisation, pathologisation, and criminalisation. The benefits of the cryptomarkets therefore extend from being a novel form of illicit drug distribution and into their ability reconfigure the cultural meaning and recognition of drug use.

Acknowledgements

Thank you to Dr. Kim Masson her advice on the paper and title.

References

Abel GM and Fitzgerald LJ (2012) "'The street's got its advantages': Movement between sectors of the sex industry in a decriminalised environment". *Health, Risk & Society* 14(1): 7–23.

Aldridge J and Askew R (2017) "Delivery dilemmas: How drug cryptomarket users identify and seek to reduce their risk of detection by law enforcement". *International Journal of Drug Policy* 41(Supplement C): 101–109.

Aldridge J and Décary-Hétu D (2014) "Not an "e-Bay for Drugs": The Cryptomarket "Silk Road" as a Paradigm Shifting Criminal Innovation". SSRN Scholarly Paper, Rochester, NY: Social Science Research Network.

Aldridge J and Décary-Hétu D (2016) "Hidden Wholesale: The drug diffusing capacity of online drug cryptomarkets". *International Journal of Drug Policy* 35: 7–15.

Aldridge J, Stevens A and Barratt MJ (2017) "Will growth in cryptomarket drug buying increase the harms of illicit drugs?" *Addiction* early online.

Askew R (2016) "Functional fun: Legitimising adult recreational drug use". *International Journal of Drug Policy* 36: 112–119.

Bancroft A and Scott Reid P (2016) "Concepts of illicit drug quality among darknet market users: Purity, embodied experience, craft and chemical knowledge". *International Journal of Drug Policy* 35: 42–49.

Barratt MJ (2011) "Discussing illicit drugs in public internet forums: Visibility, stigma, and pseudonymity." In: *Proceedings of the 5th International Conference on Communities and Technologies*, Brisbane, pp. 159–168.

Barratt MJ, Allen M and Lenton S (2014a) "'PMA Sounds Fun': Negotiating Drug Discourses Online". *Substance Use & Misuse* 49(8): 987–998.

Barratt MJ, Ferris JA and Winstock AR (2014b) "Use of Silk Road, the online drug marketplace, in the United Kingdom, Australia and the United States". *Addiction* 109(5): 774–783.

Barratt MJ, Ferris JA and Winstock AR (2016a) "Safer scoring? Cryptomarkets, social supply and drug market violence". *International Journal of Drug Policy* 35: 24–31.

Barratt MJ, Lenton S, Maddox A, et al. (2016b) "'What if you live on top of a bakery and you like cakes?' Drug use and harm trajectories before, during and after the emergence of Silk Road". *International Journal of Drug Policy* 35: 50–57.

Barratt MJ, Coney L, Aldridge J, et al. (2017) "Who initiates drug use through cryptomarkets?", The 11th International Society for the Study of Drug Policy.

Beckert J and Dewey M (2017) "Introduction: The Social Organization of Illegal Markets". In: Beckert J and Dewey M (eds.), *The Architecture of Illegal Markets: Towards an Economic Sociology of Illegality in the Economy*, Oxford: Oxford University Press, pp. 1–34.

Beer D (2016) *Metric Power*. London: Palgrave Macmillan.

Boucher LM, Marshall Z, Martin A, et al. (2017) Expanding conceptualizations of harm reduction: results from a qualitative community-based participatory research study with people who inject drugs. *Harm Reduction Journal* 14: 18.

Bourgois P and Schonberg J (2007) "Intimate Apartheid: Ethnic Dimensions of Habitus Among Homeless Heroin Injectors". *Ethnography* 8(7): 7–31.

Broséus J, Morelato M, Tahtouh M, et al. (2017) "Forensic drug intelligence and the rise of cryptomarkets. Part I: Studying the Australian virtual market". *Forensic Science International* 279(Supplement C): 288–301.

Brown P (2014) "Risk and Social Theory: the legitimacy of risks and risk as a tool of legitimation". *Health, Risk & Society* 16(5): 391–397.

Brown P (2016) "From rationalities to lifeworlds: analysing the everyday handling of uncertainty and risk in terms of culture, society and identity". *Health, Risk & Society* 18(7–8): 335–347.

Çalışkan E, Minárik T and Osula A-M (2015) *Technical and Legal Overview of the Tor Anonymity Network*. Tallinn: NATO Cooperative Cyber Defence Centre of Excellence.

Coomber R, Moyle L and South N (2015) "The normalisation of drug supply: The social supply of drugs as the 'other side' of the history of normalisation". *Drugs: Education, Prevention and Policy* 23(3): 255–263.

Decorte T (2001) "Quality Control by Cocaine Users: Underdeveloped Harm Reduction Strategies". *European Addiction Research* 7(4): 161–175.

Décary-Hétu D and Giommoni L (2017) "Do police crackdowns disrupt drug cryptomarkets? A longitudinal analysis of the effects of Operation Onymous". *Crime, Law and Social Change* 67(1): 55–75.

Décary-Hétu D and Quessy-Doré O (2017) "Are Repeat Buyers in Cryptomarkets Loyal Customers? Repeat Business Between Dyads of Cryptomarket Vendors and Users." *American Behavioral Scientist* 61(11): 1341–1357.

Drumm RD, McBride D, Metsch L, et al. (2005) "'I'm a Health Nut!' Street Drug Users' Accounts of Self-Care Strategies". *Journal Of Drug Issues* 35(3): 607–629.

Epstein S (1996) *Impure Science: AIDS, Activism, and the Politics of Knowledge*. Berkeley: University of California Press.

Duxbury SW and Haynie DL (2017) "Building them up, breaking them down: Topology, vendor selection patterns, and a digital drug market's robustness to disruption". *Social Networks*. early online.

Faulkner-Gurstein R (2017) "The social logic of naloxone: Peer administration, harm reduction, and the transformation of social policy". *Social Science & Medicine* 180: 20–27.

Friedman SR, de Jong W, Rossi D, et al. (2007) "Harm reduction theory: Users' culture, micro-social indigenous harm reduction, and the self-organization and outside-organizing of users' groups". *International Journal of Drug Policy* 18(2): 107–117.

Gilbert M and Dasgupta N (2017) "Silicon to syringe: Cryptomarkets and disruptive innovation in opioid supply chains". *International Journal of Drug Policy* 46: 160–167.

Gowan T, Whetstone S and Andic T (2012) :Addiction, agency, and the politics of self-control: Doing harm reduction in a heroin users' group". *Social Science & Medicine* 74(8): 1251–1260.

Gunter B, Hansen A and Touri M (2010) *Alcohol Advertising and Young People's Drinking: Representation, Reception and Regulation*. New York: Palgrave MacMillan.

Harris M and Rhodes T (2013) "Methadone diversion as a protective strategy: The harm reduction potential of 'generous constraints'." *International Journal of Drug Policy* 24(6): e43–e50.

Hunt GP, Evans K and Kares F (2007) "Drug Use and Meanings of Risk and Pleasure". *Journal of Youth Studies* 10(1): 73–96.

Jauffret-Roustide M (2009) "Self-support for drug users in the context of harm reduction policy: A lay expertise defined by drug users' life skills and citizenship". *Health Sociology Review* 18(2): 159–172.

Keane H (2003) "Critiques of harm reduction, morality and the promise of human rights." *International Journal of Drug Policy* 14(3): 227–232.

Lancaster K, Treloar C and Ritter A (2017) "'Naloxone works': The politics of knowledge in 'evidence-based' drug policy". *Health* 21(3): 278–294.

Lupton D (2015) "Lively Data, Social Fitness and Biovalue: The Intersections of Health Self-Tracking and Social Media". *Social Science Research Network*.

Lupton D (2016) *The Quantified Self: A Sociology of Self-Tracking Cultures*. Cambridge: Polity.

Maddox A, Barratt MJ, Allen M, et al. (2016) "Constructive Activism in the Dark Web: Cryptomarkets and Illicit Drugs in the Digital 'Demimonde'." *Information, Communication & Society* 19(1): 111–126.

Martin J (2014) *Drugs on the Dark Net: How Cryptomarkets are Transforming the Global Trade in Illicit Drugs*. London: Palgrave Macmillan.

Measham F and Shiner M (2009) "The legacy of 'normalisation': The role of classical and contemporary criminological theory in understanding young people's drug use". *International Journal of Drug Policy* 20(6): 502–508.

Moore D (2008) "Erasing pleasure from public discourse on illicit drugs: On the creation and reproduction of an absence". *International Journal of Drug Policy* 19(5): 353–358.

Munksgaard R and Demant J (2016) "Mixing politics and crime–the prevalence and decline of political discourse on the cryptomarket". *International Journal of Drug Policy* 35: 77–83.

Munksgaard R, Bakken S and Demant J (2017) "Risk perception in emerging markets for illicit substances in Scandinavia: The effect of available information through online communities". *The Scandinavian Research Council for Criminology*.

Pasquale F (2017) "Two Narratives of Platform Capitalism". *Yale Law & Policy Review* 35(1): 11.

Pereira M and Scott J (2017) "Harm reduction and the ethics of drug use: contemporary techniques of self-governance". *Health Sociology Review* 26(1): 69–83.

Rhodes T (1997) "Risk Theory in Epidemic Times: Sex, Drugs and the Social Organisation of 'Risk Behaviour'." *Sociology of Health and Illness* 19(2): 208–227.

Rhodes T (2002) "The 'risk environment': a framework for understanding and reducing drug-related harm". *International Journal of Drug Policy* 13(2): 85–94.

Rhodes T (2009) "Risk environments and drug harms: A social science for harm reduction approach". *International Journal of Drug Policy* 20(3): 193–201.

Rhodes T, Singer M, Bourgois P, et al. (2005) "The social structural production of HIV risk among injecting drug users". *Social Science & Medicine* 61(5): 1026–1044.

Robins S (2004) "'Long live Zackie, long live': AIDS activism, science and citizenship after apartheid". *Journal of Southern African Studies* 30: 651–672.

Soska K and Christin N (2015) "Measuring the Longitudinal Evolution of the Online Anonymous Marketplace Ecosystem". *Proceedings of the 22nd USENIX Security Symposium*, Washington, DC.

Van Hout MC and Bingham T (2014) "Responsible vendors, intelligent consumers: Silk Road, the online revolution in drug trading". *International Journal of Drug Policy* 25(2): 183–189.

Van Hout MC and Hearne E (2016) "New psychoactive substances (NPS) on cryptomarket fora: An exploratory study of characteristics of forum activity between NPS buyers and vendors". *International Journal of Drug Policy* 40: 102–110.

Van Buskirk J, Naicker S, Roxburgh A, et al. (2016) "Who Sells What? Country Specific Differences in Substance Availability on the Agora Cryptomarket". *International Journal of Drug Policy* 35: 16–23.

Winstock AR and Barratt MJ (2017) "Dark-net markets: the good, the bad and ugly?". *Global Drug Survey*.

Zinn JO (2008) "Heading into the unknown: Everyday strategies for managing risk and uncertainty". *Health, Risk & Society* 10(5): 439–450.

Zinn JO (2015) "Towards a better understanding of risk-taking: key concepts, dimensions and perspectives". *Health, Risk & Society* 17(2): 99–114.